



27123

PATENT TRADEMARK OFFICE

SEQUENCE LISTING

<110> DWORETZKY, STEVEN I
RAMANATHAN, CHANDRA S
TROJNACKI, JOANNE T
BOISSARD, CHRISTOPHER G
GRIBKOFF, VALENTIN K

<120> HUMAN KCNQ5 POTASSIUM CHANNEL METHODS AND COMPOSITIONS
THEREOF

<130> 3053-4091US1

<140> TBA

<141> 2001-05-24

<150> 60/207,389

<151> 2000-05-26

<160> 31

<170> PatentIn Ver. 2.1

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Gly Ala Arg Met Ser Leu Leu Gly Lys Pro Leu Ser Tyr Thr Ser Ser
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Trp	Ser	Ala	Gly	Cys	Cys	Cys	Arg	Tyr	Arg	Gly	Trp	Gln	Gly	Arg	Leu	145	150	155
Arg	Phe	Ala	Arg	Lys	Pro	Phe	Cys	Val	Ile	Asp	Thr	Ile	Val	Leu	Ile	165	170	175
Ala	Ser	Ile	Ala	Val	Val	Ser	Ala	Lys	Thr	Gln	Gly	Asn	Ile	Phe	Ala	180	185	190
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Gly	Arg	Leu	Leu	Ser	Ala	Gly	Phe	Ala	Leu	Leu	Gly	Ile	Ser	Phe	Phe	290	295	300
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0956020-052401

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Val Ser Ile Ala Thr Trp Lys Pro His Leu Lys Ala Leu His Thr Cys
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Lys Ser Arg Gln Ala Ser Val Gly Asp Arg Arg Ser Pro Ser Thr Asp
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Thr Thr Asp Asp Leu Ser Met Leu Gly Arg Val Val Lys Val Glu Lys
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580 585 590

Asp Thr Phe Asp Ala Ala Pro Gln Pro Ala Arg Glu Ala Ala Phe Ala
 850 855 860

Ser Asp Ser Leu Arg Thr Gly Arg Ser Arg Ser Ser Gln Ser Ile Cys
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5

10

15

Trp Gly Arg Leu Pro Gly Ala Arg Arg Gly Ser Ala Gly Leu Ala Lys

20

25

30

Lys Cys Pro Phe Ser Leu Glu Leu Ala Glu Gly Gly Pro Ala Gly Gly

35

40

45

Ala Leu Tyr Ala Pro Ile Ala Pro Gly Ala Pro Gly Pro Ala Pro Pro

50

55

60

Ala Ser Pro Ala Ala Pro Ala Ala Pro Pro Val Ala Ser Asp Leu Gly

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Arg Arg Pro Val Leu Ala Arg Thr His Val Gln Gly Arg Val Tyr Asn						
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Phe Leu Glu Arg Pro Thr Gly Trp Lys Cys Phe Val Tyr His Phe Ala						
	115		120		125	
Val Phe Leu Ile Val Leu Val Cys Leu Ile Phe Ser Val Leu Ser Thr						
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Phe Ala Arg Lys Pro Ile Ser Ile Ile Asp Leu Ile Val Val Val Ala						
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Ser Met Val Val Leu Cys Val Gly Ser Lys Gly Gln Val Phe Ala Thr						
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Ser Ala Ile Arg Gly Ile Arg Phe Leu Gln Ile Leu Arg Met Leu His						
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Val Asp Arg Gln Gly Gly Thr Trp Arg Leu Leu Gly Ser Val Val Phe						
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Ser	Glu	Lys	Ser	Lys	Asp	Arg	Gly	Ser	Asn	Thr	Ile	Gly	Ala	Arg	Leu	

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Ile Thr Asp Met Leu His Gln Leu Leu Ser Leu His Gly Gly Ser Thr		
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Pro Gly Ser Gly Gly Pro Pro Arg Glu Gly Gly Ala His Ile Thr Gln		
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35	40	45
Lys Arg Gly Ser Ile Leu Ser Lys Pro Arg Ala Gly Gly Ala Gly Ala		
50	55	60
Gly Lys Pro Pro Lys Arg Asn Ala Phe Tyr Arg Lys Leu Gln Asn Phe		
65	70	75
Leu Tyr Asn Val Leu Glu Arg Pro Arg Gly Trp Ala Phe Ile Tyr His		
85	90	95
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Ile Trp Ala Ala Gly Cys Cys Cys Arg Tyr Arg Gly Trp Arg Gly Arg
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Leu Lys Phe Ala Arg Lys Pro Phe Cys Val Ile Asp Ile Met Val Leu
165 170 175

Ile Ala Ser Ile Ala Val Leu Ala Ala Gly Ser Gln Gly Asn Val Phe
180 185 190

Ala Thr Ser Ala Leu Arg Ser Leu Arg Phe Leu Gln Ile Leu Arg Met
195 200 205

Ile Arg Met Asp Arg Arg Gly Gly Thr Trp Lys Leu Leu Gly Ser Val
210 215 220

Val Tyr Ala His Ser Lys Glu Leu Val Thr Ala Trp Tyr Ile Gly Phe
225 230 235 240

Leu Cys Leu Ile Leu Ala Ser Phe Leu Val Tyr Leu Ala Glu Lys Gly
245 250 255

Glu Asn Asp His Phe Asp Thr Tyr Ala Asp Ala Leu Trp Trp Gly Leu
260 265 270

Ile Thr Leu Thr Thr Ile Gly Tyr Gly Asp Lys Tyr Pro Gln Thr Trp
275 280 285

Asn Gly Arg Leu Leu Ala Ala Thr Phe Thr Leu Ile Gly Val Ser Phe
290 295 300

Phe Ala Leu Pro Ala Gly Ile Leu Gly Ser Gly Phe Ala Leu Lys Val
305 310 315 320

Gln Glu Gln His Arg Gln Lys His Phe Glu Lys Arg Arg Asn Pro Ala
325 330 335

Ala Gly Leu Ile Gln Ser Ala Trp Arg Phe Tyr Ala Thr Asn Leu Ser
340 345 350

Arg Thr Asp Leu His Ser Thr Trp Gln Tyr Tyr Glu Arg Thr Val Thr
355 360 365

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T04250.02099860

Val	Pro	Met	Tyr	Arg	Leu	Ile	Pro	Pro	Leu	Asn	Gln	Leu	Glu	Leu	Leu	370	375	380
Arg	Asn	Leu	Lys	Ser	Lys	Ser	Gly	Leu	Ala	Phe	Arg	Lys	Asp	Pro	Pro	385	390	395
Pro	Glu	Pro	Ser	Pro	Ser	Gln	Lys	Val	Ser	Leu	Lys	Asp	Arg	Val	Phe	405	410	415
Ser	Ser	Pro	Arg	Gly	Val	Ala	Ala	Lys	Gly	Lys	Gly	Ser	Pro	Gln	Ala	420	425	430
Gln	Thr	Val	Arg	Arg	Ser	Pro	Ser	Ala	Asp	Gln	Ser	Leu	Glu	Asp	Ser	435	440	445
Pro	Ser	Lys	Val	Pro	Lys	Ser	Trp	Ser	Phe	Gly	Asp	Arg	Ser	Arg	Ala	450	455	460
Arg	Gln	Ala	Phe	Arg	Ile	Lys	Gly	Ala	Ala	Ser	Arg	Gln	Asn	Ser	Glu	465	470	475
Glu	Ala	Ser	Leu	Pro	Gly	Glu	Asp	Ile	Val	Asp	Asp	Lys	Ser	Cys	Pro	485	490	495
Cys	Glu	Phe	Val	Thr	Glu	Asp	Leu	Thr	Pro	Gly	Leu	Lys	Val	Ser	Ile	500	505	510
Arg	Ala	Val	Cys	Val	Met	Arg	Phe	Leu	Val	Ser	Lys	Arg	Lys	Phe	Lys	515	520	525
Glu	Ser	Leu	Arg	Pro	Tyr	Asp	Val	Met	Asp	Val	Ile	Glu	Gln	Tyr	Ser	530	535	540
Ala	Gly	His	Leu	Asp	Met	Leu	Ser	Arg	Ile	Lys	Ser	Leu	Gln	Ser	Arg	545	550	555
Val	Asp	Gln	Ile	Val	Gly	Arg	Gly	Pro	Ala	Ile	Thr	Asp	Lys	Asp	Arg	565	570	575
Thr	Lys	Gly	Pro	Ala	Glu	Ala	Glu	Leu	Pro	Glu	Asp	Pro	Ser	Met	Met	580	585	590
Gly	Arg	Leu	Gly	Lys	Val	Glu	Lys	Gln	Val	Leu	Ser	Met	Glu	Lys	Lys	595	600	605
Leu	Asp	Phe	Leu	Val	Asn	Ile	Tyr	Met	Gln	Arg	Met	Gly	Ile	Pro	Pro	610	615	620

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Thr	Glu	Thr	Glu	Ala	Tyr	Phe	Gly	Ala	Lys	Glu	Pro	Glu	Pro	Ala	Pro	625	630	635	640
Pro	Tyr	His	Ser	Pro	Glu	Asp	Ser	Arg	Glu	His	Val	Asp	Arg	His	Gly	645	650	655	
Cys	Ile	Val	Lys	Ile	Val	Arg	Ser	Ser	Ser	Ser	Thr	Gly	Gln	Lys	Asn	660	665	670	
Phe	Ser	Ala	Pro	Pro	Ala	Ala	Pro	Pro	Val	Gln	Cys	Pro	Pro	Ser	Thr	675	680	685	
Ser	Trp	Gln	Pro	Gln	Ser	His	Pro	Arg	Gln	Gly	His	Gly	Thr	Ser	Pro	690	695	700	
Val	Gly	Asp	His	Gly	Ser	Leu	Val	Arg	Ile	Pro	Pro	Pro	Pro	Ala	His	705	710	715	720
Glu	Arg	Ser	Leu	Ser	Ala	Tyr	Gly	Gly	Gly	Asn	Arg	Ala	Ser	Met	Glu	725	730	735	
Phe	Leu	Arg	Gln	Glu	Asp	Thr	Pro	Gly	Cys	Arg	Pro	Pro	Glu	Gly	Thr	740	745	750	
Leu	Arg	Asp	Ser	Asp	Thr	Ser	Ile	Ser	Ile	Pro	Ser	Val	Asp	His	Glu	755	760	765	
Glu	Leu	Glu	Arg	Ser	Phe	Ser	Gly	Phe	Ser	Ile	Ser	Gln	Ser	Lys	Glu	770	775	780	
Asn	Leu	Asp	Ala	Leu	Asn	Ser	Cys	Tyr	Ala	Ala	Val	Ala	Pro	Cys	Ala	785	790	795	800
Lys	Val	Arg	Pro	Tyr	Ile	Ala	Glu	Gly	Glu	Ser	Asp	Thr	Asp	Ser	Asp	805	810	815	
Leu	Cys	Thr	Pro	Cys	Gly	Pro	Pro	Pro	Arg	Ser	Ala	Thr	Gly	Glu	Gly	820	825	830	
Pro	Phe	Gly	Asp	Val	Gly	Trp	Ala	Gly	Pro	Arg	Lys					835	840		

<210> 31

<211> 695

<212> PRT

<213> Homo sapiens

<400> 31

Met Ala Glu Ala Pro Pro Arg Arg Leu Gly Leu Gly Pro Pro Pro Gly
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Asp Ala Pro Arg Ala Glu Leu Val Ala Leu Thr Ala Val Gln Ser Glu
20 25 30

Gln Gly Glu Ala Gly Gly Gly Gly Ser Pro Arg Arg Leu Gly Leu Leu
35 40 45

Gly Ser Pro Leu Pro Pro Gly Ala Pro Leu Pro Gly Pro Gly Ser Gly
50 55 60

Ser Gly Ser Ala Cys Gly Gln Arg Ser Ser Ala Ala His Lys Arg Tyr
65 70 75 80

Arg Arg Leu Gln Asn Trp Val Tyr Asn Val Leu Glu Arg Pro Arg Gly
85 90 95

Trp Ala Phe Val Tyr His Val Phe Ile Phe Leu Leu Val Phe Ser Cys
100 105 110

Leu Val Leu Ser Val Leu Ser Thr Ile Gln Glu His Gln Glu Leu Ala
115 120 125

Asn Glu Cys Leu Leu Ile Leu Glu Phe Val Met Ile Val Val Phe Gly
130 135 140

Leu Glu Tyr Ile Val Arg Val Trp Ser Ala Gly Cys Cys Cys Arg Tyr
145 150 155 160

Arg Gly Trp Gln Gly Arg Phe Arg Phe Ala Arg Lys Pro Phe Cys Val
165 170 175

Ile Asp Phe Ile Val Phe Val Ala Ser Val Ala Val Ile Ala Ala Gly
180 185 190

Thr Gln Gly Asn Ile Phe Ala Thr Ser Ala Leu Arg Ser Met Arg Phe
195 200 205

Leu Gln Ile Leu Arg Met Val Arg Met Asp Arg Arg Gly Gly Thr Trp
210 215 220

Lys Leu Leu Gly Ser Val Val Tyr Ala His Ser Lys Glu Leu Ile Thr
225 230 235 240

Ala Trp Tyr Ile Gly Phe Leu Val Leu Ile Phe Ala Ser Phe Leu Val
245 250 255

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Tyr	Leu	Ala	Glu	Lys	Asp	Ala	Asn	Ser	Asp	Phe	Ser	Ser	Tyr	Ala	Asp	260	265	270
Ser	Leu	Trp	Trp	Gly	Thr	Ile	Thr	Leu	Thr	Thr	Ile	Gly	Tyr	Gly	Asp	275	280	285
Lys	Thr	Pro	His	Thr	Trp	Leu	Gly	Arg	Val	Leu	Ala	Ala	Gly	Phe	Ala	290	295	300
Leu	Leu	Gly	Ile	Ser	Phe	Phe	Ala	Leu	Pro	Ala	Gly	Ile	Leu	Gly	Ser	305	310	315
Gly	Phe	Ala	Leu	Lys	Val	Gln	Glu	Gln	His	Arg	Gln	Lys	His	Phe	Glu	325	330	335
Lys	Arg	Arg	Met	Pro	Ala	Ala	Asn	Leu	Ile	Gln	Ala	Ala	Trp	Arg	Leu	340	345	350
Tyr	Ser	Thr	Asp	Met	Ser	Arg	Ala	Tyr	Leu	Thr	Ala	Thr	Trp	Tyr	Tyr	355	360	365
Tyr	Asp	Ser	Ile	Leu	Pro	Ser	Phe	Arg	Glu	Leu	Ala	Leu	Leu	Phe	Glu	370	375	380
His	Val	Gln	Arg	Ala	Arg	Asn	Gly	Gly	Leu	Arg	Pro	Leu	Glu	Val	Arg	385	390	395
Arg	Ala	Pro	Val	Pro	Asp	Gly	Ala	Pro	Ser	Arg	Tyr	Pro	Pro	Val	Ala	405	410	415
Thr	Cys	His	Arg	Pro	Gly	Ser	Thr	Ser	Phe	Cys	Pro	Gly	Glu	Ser	Ser	420	425	430
Arg	Met	Gly	Ile	Lys	Asp	Arg	Ile	Arg	Met	Gly	Ser	Ser	Gln	Arg	Arg	435	440	445
Thr	Gly	Pro	Ser	Lys	Gln	Gln	Leu	Ala	Pro	Pro	Thr	Met	Pro	Thr	Ser	450	455	460
Pro	Ser	Ser	Glu	Gln	Val	Gly	Glu	Ala	Thr	Ser	Pro	Thr	Lys	Val	Gln	465	470	475
Lys	Ser	Trp	Ser	Phe	Asn	Asp	Arg	Thr	Arg	Phe	Arg	Ala	Ser	Leu	Arg	485	490	495
Leu	Lys	Pro	Arg	Thr	Ser	Ala	Glu	Asp	Ala	Pro	Ser	Glu	Glu	Val	Ala	500	505	510

Glu Glu Lys Ser Tyr Gln Cys Glu Leu Thr Val Asp Asp Ile Met Pro
 515 520 525

Ala Val Lys Thr Val Ile Arg Ser Ile Arg Ile Leu Lys Phe Leu Val
 530 535 540

Ala Lys Arg Lys Phe Lys Glu Thr Leu Arg Pro Tyr Asp Val Lys Asp
 545 550 555 560

Val Ile Glu Gln Tyr Ser Ala Gly His Leu Asp Met Leu Gly Arg Ile
 565 570 575

Lys Ser Leu Gln Thr Arg Val Asp Gln Ile Val Gly Arg Gly Pro Gly
 580 585 590

Asp Arg Lys Ala Arg Glu Lys Gly Asp Lys Gly Pro Ser Asp Ala Glu
 595 600 605

Val Val Asp Glu Ile Ser Met Met Gly Arg Val Val Lys Val Glu Lys
 610 615 620

Gln Val Gln Ser Ile Glu His Lys Leu Asp Leu Leu Leu Gly Phe Tyr
 625 630 635 640

Ser Arg Cys Leu Arg Ser Gly Thr Ser Ala Ser Leu Gly Ala Val Gln
 645 650 655

Val Pro Leu Phe Asp Pro Asp Ile Thr Ser Asp Tyr His Ser Pro Val
 660 665 670

Asp His Glu Asp Ile Ser Val Ser Ala Gln Thr Leu Ser Ile Ser Arg
 675 680 685

Ser Val Ser Thr Asn Met Asp
 690 695

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